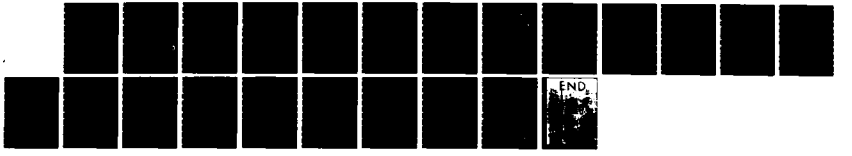
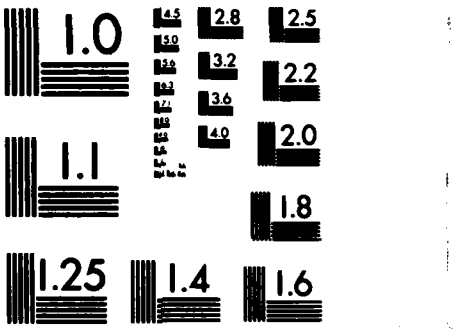
AD-A136 710 19313AT MLRS MISSILE NUMBER 4684 3705 3766 4835 3723 1/1
4681 ROUND NUMBER 50..(U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER NOV 83
UNCLASSIFIED ERADCOM/ASL-DR-1322 F/G 4/2 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

METEOROLOGICAL DATA REPORT

Missile Number 4684, 3705, 3766
4835, 3723, 4681
Round Number 504 Thru 509
9 November 1983

by

DONALD C. KELLER
Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM
UNITED STATES ARMY ELECTRONICS COMMAND

DISPOSITION INSTRUCTIONS

Destroy this report when it is no longer needed. Do not return to the originator.

DISCLAIMER

The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

The citation of trade names and names of manufacturers in this report is not to be construed as official Government indorsement or approval of commercial products or services referenced herein.

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1322	2. GOVT ACCESSION NO. A136710	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19313AT MLRS, Missile Numbers 4684,3705,3766,4835, 3723,4681 Round Number 504 Thru 509		5. TYPE OF REPORT & PERIOD COVERED 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) White Sands Meteorological Team		8. CONTRACT OR GRANT NUMBER(s) DA Task 1F6657020127-02
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002		12. REPORT DATE 9 Nov 83 13. NUMBER OF PAGES
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) US Army Electronics Research and Development Cmd Adelphi, MD 20783		15. SECURITY CLASS. (of this report) UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

Approved for public release; distribution unlimited.

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 19313 AT MLRS, Missile Number 4684, 3705, 3766, 4835, 3723, 4681, Round Number 504 Thru 509 presented in tabular form.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

CONTENTS PAGE

INTRODUCTION

19313AT MLRS, Missile Numbers 4684, 3705, 3766, 4835, 3723 and 4681, Round Numbers 504 Thru 509, were launched from Tula Gate, White Sands Missile Range (WSMR). New Mexico, at 1053:20, 1053:25, 1053:29, 1053:34, 1053:38 and 1053:43 MST, 9Nov 1983. The scheduled launch times were 1000 MST with a 4.5 second separation.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature (°C), relative humidity, dew point (°C), density (gm/m^3), wind direction and speed, and cloud cover were made at the Tula Gate Met Site at T-0 minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at Tula Gate . Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

SITE AND ALTITUDE

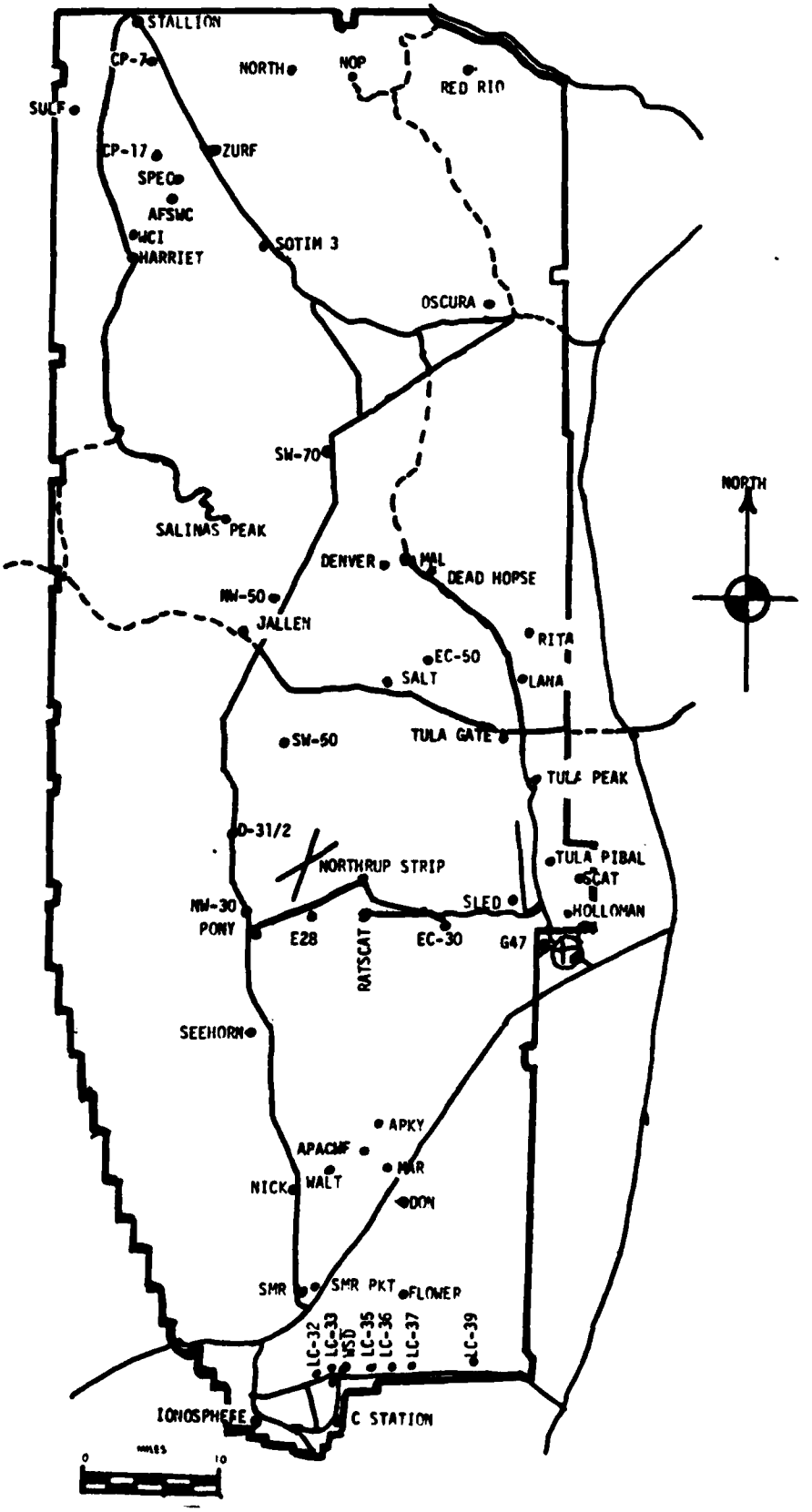
Tula Gate	1750 Meters
Mal	2000 Meters

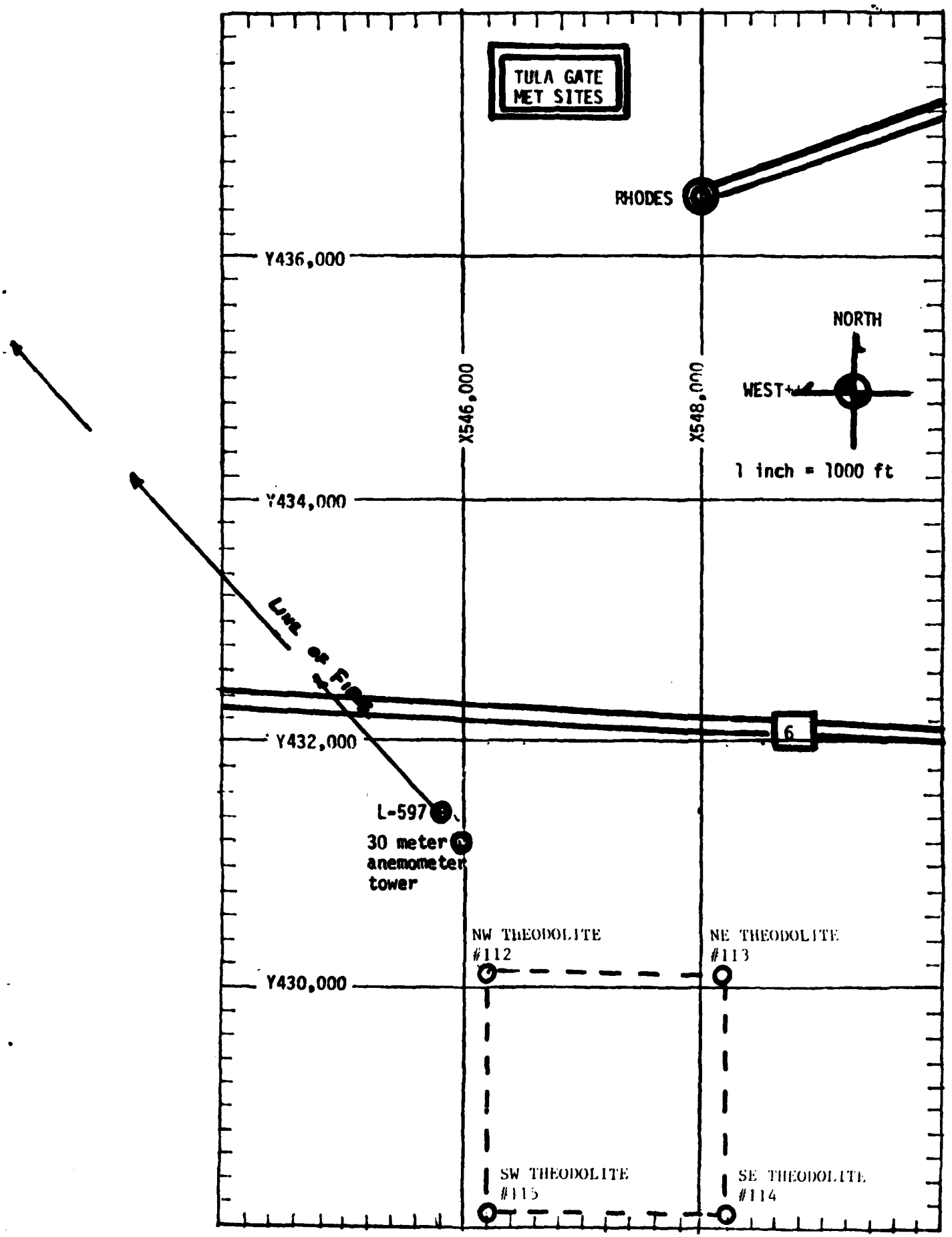
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME

Rita 0800
Rita 1100

WSMR METEOROLOGICAL SITES




TULA GATE
MET SITES
RHODES
Y436,000
NORTH
WEST
X546,000
X548,000
1 inch = 1000 ft
Y434,000
Line of Fire
6
Y432,000
L-597
30 meter
anemometer
tower
NW THEODOLITE
#112
NE THEODOLITE
#113
Y430,000
SW THEODOLITE
#115
SE THEODOLITE
#114

PROJECT SURFACE OBSERVATION

TABLE 1

STATION Tula Gat

DATE 09 (DAY) 11 (MONTH) 83 (YEAR)

X= 545,785.2 Y= 431,459.0 H= 4103.3

TIME M S T	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1053	882.1		11.5		-5.3	30	1079.2	350	14		30

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	1	Ci	25,000							

PSYCHROMETRIC COMPUTATION

TIME: MST	1053		
DRY BULB TEMP.	11.5		
WET BULB TEMP.	4.2		
WET BULB DEPR.	7.3		
DEW POINT	-5.3		
RELATIVE HUMID.	30		

TABLE 2 ANEMOMETER DATA - 30 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)

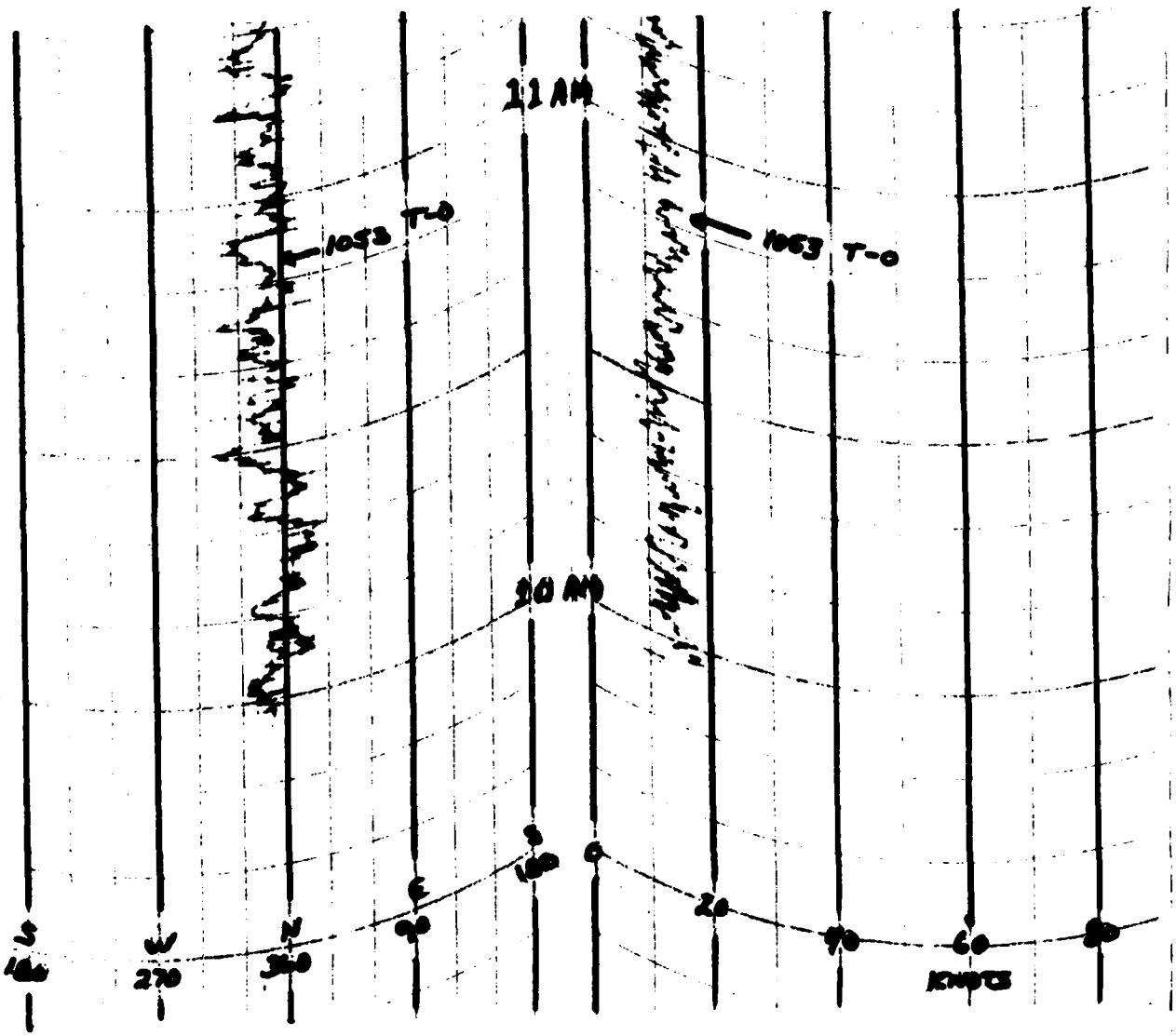


TABLE 3 ANEMOMETER DATA - 60 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)

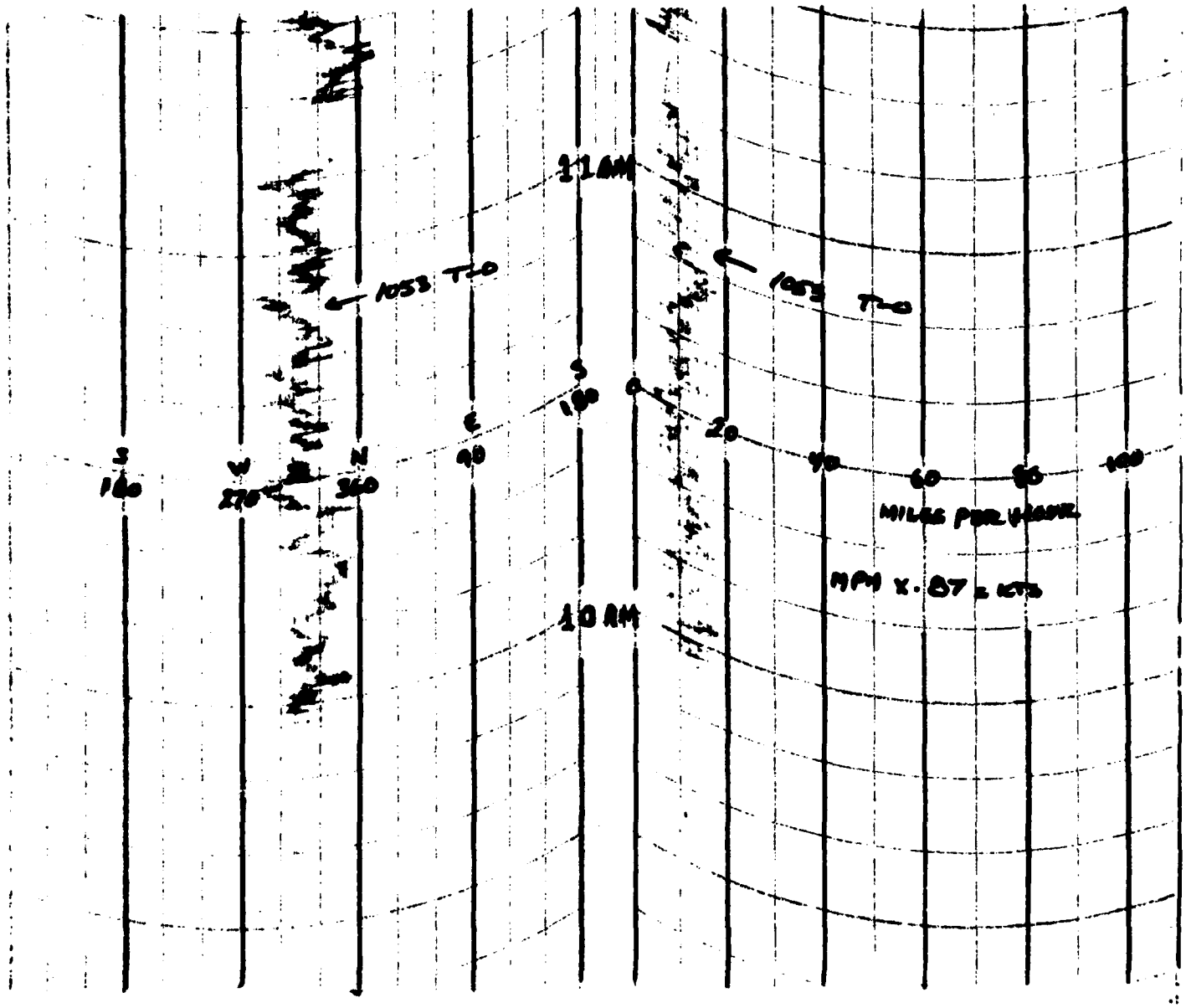


TABLE 4 ANEMOMETER DATA - 90 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)

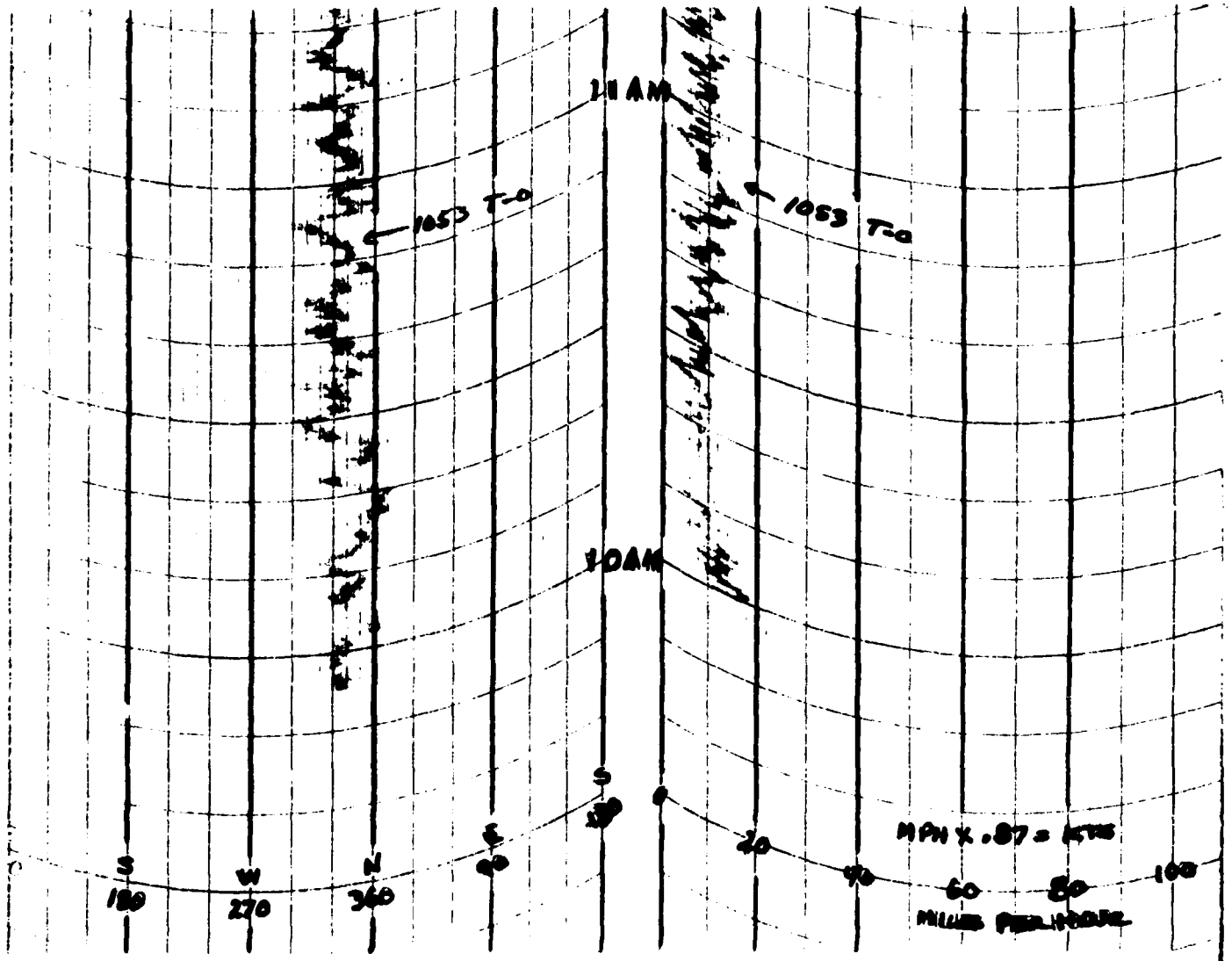


TABLE 5

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 09 Nov 83

SITE: Tula Gate
TIME: 1053 MST
WSTM COORDINATES:
X= 546,204.20
Y= 430,125.39
H= 4,108.59

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	350	14
150	341	18
210	338	15
270	340	16
330	339	17
390	344	16
500	354	16
650	359	18
800	352	19
950	342	18
1150	349	09
1350	330	10
1550	321	21
1750	298	20
2000		

Data obtained from a Double Theodolite Tracked pilot-balloon observation.

SITE: Mal
TIME 1054 MST
WSTM COORDINATES:
X= 509,421.05
Y= 497,563.78
H= 4,133.09

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	360	08
150	360	12
210	360	13
270	359	14
330	357	15
390	360	15
500	006	15
650	005	17
800	009	13
950	355	06
1150	338	08
1350	349	11
1550	347	18
1750	319	18
2000	298	23

Data obtained from a Single Theodolite Tracked pilot-balloon observation.

AIMING AND T-TIME COMPUTER MET MESSAGES

9 November 1983

RITA 0800 MST
METCM1332062
091500128880
00640015 28090880
01628020 28090870
02007022 27930843
03627018 27650803
04582018 27500755
05539012 27540710
06603020 27560667
07573025 27410627
08553033 27050589
09537028 26690553
10563028 26340518
11559032 25990486
12548032 25420440
13545034 24650384
14555035 23770333
15577040 22920288
16580033 22000248

RITA 1100 MST
METCM1332062
091800128882
00622009 28590882
01621012 28360872
02624012 28010846
03626011 27630805
04593012 27540757
05540013 27720712
06580016 27680669
07582025 27270629
08554029 26980591
09541028 26780554
10546026 26360520
11542028 25950487
12542032 25350441
13534030 24580385
14553029 23750334
15567034 22820289
16574037 21970248

STATION ALTITUDE 4186.74 FEET MSL
9 NOV. 83 0800 HRS MST
ASCENSION NO. 9

SIGNIFICANT LEVEL DATA
3130210009
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 7

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
889.2	4186.7	7.0	-2.2	52.0
868.8	4539.1	7.5	-3.4	46.0
859.0	5129.0	5.9	-8.0	36.0
816.2	6216.0	4.0	-9.3	37.0
786.6	7198.4	1.9	-13.8	30.0
767.0	7865.4	.8	-13.2	34.0
758.3	8307.0	2.0	-12.2	34.0
703.0	10287.2	2.0	-16.4	24.0
696.5	10649.6	2.4	-16.1	24.0
644.6	12474.7	2.1	-15.4	26.0
617.1	13626.0	-.3	-17.0	27.0
547.8	16720.1	-6.9	-22.7	27.0
536.8	17239.2	-8.3	-20.7	36.0
500.0	19039.6	-11.9	-24.2	35.0
443.0	22047.8	-18.7	-28.6	41.0
427.9	22995.3	-20.5	-31.6	36.0
400.0	24522.4	-25.1	-35.6	39.0
384.1	25489.7	-26.4	-37.5	34.0
317.5	29905.1	-38.9	-47.8	38.0
309.0	31178.1	-41.7		
250.0	35150.3	-52.8		
208.6	38914.6	-62.5		
202.0	39567.7	-62.8		
200.0	39768.7	-64.9		

UPPER AIR DATA

STATION ALTITUDE 4186.74 FEET MSL
9 NOV. 83 0800 HRS MST
ASCENSION NO. 9

3130210009
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15119 LON DEG

TABLE 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4186.7	880.2	7.0	-2.2	52.0	1092.1	652.6	360.0	15.0	1.000268
4500.0	870.1	7.4	-3.2	46.7	1077.9	653.3	.3	15.6	1.000263
5000.0	854.1	6.2	-6.9	38.2	1063.2	651.7	.0	16.7	1.000254
5500.0	838.3	5.3	-8.5	36.3	1047.5	650.5	1.0	17.7	1.000249
6000.0	822.8	4.4	-9.1	36.8	1031.4	649.5	1.3	18.8	1.000245
6500.0	807.5	3.4	-10.0	35.0	1016.0	648.3	356.2	19.3	1.000240
7000.0	792.5	2.3	-12.9	31.4	1001.1	646.9	348.4	20.0	1.000234
7500.0	777.7	1.4	-13.5	31.8	985.7	645.9	340.5	19.7	1.000230
8000.0	763.1	1.2	-12.9	34.0	968.0	645.6	330.0	18.1	1.000227
8500.0	748.8	2.0	-12.5	33.0	947.0	646.6	320.6	16.7	1.000223
9000.0	734.8	2.0	-13.5	30.5	929.3	646.6	312.1	14.4	1.000218
9500.0	721.1	2.0	-14.6	28.0	912.0	646.6	307.3	13.0	1.000213
10000.0	707.6	2.0	-15.7	25.5	895.1	646.5	313.3	12.5	1.000208
10500.0	694.4	2.2	-16.2	24.0	877.6	646.8	320.7	12.9	1.000204
11000.0	681.4	2.3	-15.9	24.4	860.9	646.9	329.2	15.9	1.000201
11500.0	668.7	2.3	-15.7	24.9	845.0	646.9	334.9	19.1	1.000197
12000.0	656.2	2.2	-15.5	25.5	829.4	646.8	332.8	22.7	1.000194
12500.0	644.0	2.0	-15.4	26.0	814.3	646.6	330.5	26.4	1.000191
13000.0	631.9	1.8	-16.1	26.5	802.1	645.4	325.6	28.5	1.000187
13500.0	620.1	-.0	-16.8	26.9	790.1	644.1	319.1	29.7	1.000184
14000.0	608.5	-1.1	-17.7	27.0	778.2	642.9	314.0	30.5	1.000181
14500.0	596.7	-2.2	-18.6	27.0	766.4	641.6	309.8	30.2	1.000178
15000.0	585.3	-3.2	-19.5	27.0	754.8	640.3	306.4	29.8	1.000175
15500.0	574.1	-4.3	-20.4	27.0	743.4	639.0	304.8	28.7	1.000172
16000.0	563.2	-5.4	-21.4	27.0	732.1	637.7	303.5	27.7	1.000169
16500.0	552.5	-6.4	-22.3	27.0	721.1	636.5	305.5	27.0	1.000166
17000.0	541.8	-7.7	-21.5	31.9	710.4	635.0	307.6	26.4	1.000164
17500.0	531.3	-8.8	-21.2	35.9	699.7	633.6	310.6	27.5	1.000162
18000.0	520.9	-9.8	-22.2	35.6	688.6	632.4	313.8	28.7	1.000159
18500.0	510.8	-10.8	-23.1	35.3	677.8	631.2	315.1	30.0	1.000156
19000.0	500.8	-11.8	-24.1	35.0	667.1	630.0	315.4	31.2	1.000153
19500.0	490.8	-12.9	-24.9	35.9	656.7	628.6	315.3	32.2	1.000151
20000.0	481.0	-14.1	-25.6	36.9	646.4	627.2	314.4	32.7	1.000148
20500.0	471.5	-15.2	-26.3	37.9	636.4	625.9	313.4	33.1	1.000146
21000.0	462.1	-16.3	-27.0	38.9	626.5	624.5	311.6	32.8	1.000143
21500.0	452.9	-17.5	-27.6	39.9	616.7	623.1	309.9	32.6	1.000141
22000.0	443.9	-18.6	-28.6	40.9	607.1	621.7	308.0	31.2	1.000139
22500.0	434.9	-19.7	-30.2	38.3	597.4	620.4	306.0	29.7	1.000136
23000.0	426.0	-20.8	-31.9	36.0	587.9	619.0	305.7	29.6	1.000133
23500.0	417.3	-22.2	-33.2	36.0	579.1	617.2	306.2	29.9	1.000131

STATION ALTITUDE 4186.74 FEET MSL
9 NOV. 85 0809 HRS MST
ASCENSION NO. 9

UPPER AIR DATA
313021000G9
RITA

GEODETIC COORDINATES
33.1e295 LAT DEG
106.15114 LON DEG

TABLE 8 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	406.8	-23.6	-38.4	36.0	570.5	615.3	306.4	30.8	1.000129
24500.0	400.4	-25.0	-35.7	36.8	562.0	613.7	306.4	32.2	1.000127
25000.0	394.1	-25.7	-36.6	35.0	551.9	612.9	306.1	33.3	1.000125
25500.0	387.9	-26.4	-37.5	34.0	542.0	612.0	305.6	34.2	1.000122
26000.0	379.7	-27.8	-38.7	34.5	533.5	610.2	305.7	34.7	1.000120
26500.0	367.7	-29.3	-39.8	34.9	525.1	608.5	306.3	34.7	1.000118
27000.0	359.9	-30.7	-41.0	35.4	517.0	606.7	307.3	34.6	1.000116
27500.0	352.2	-32.1	-42.1	35.8	508.9	604.9	308.9	34.0	1.000114
28000.0	344.7	-33.5	-43.3	36.3	501.0	603.1	310.6	33.8	1.000112
28500.0	337.3	-34.9	-44.5	36.7	493.2	601.3	312.3	34.9	1.000111
29000.0	330.1	-36.3	-45.6	37.2	485.6	599.5	313.9	36.0	1.000109
29500.0	323.1	-37.8	-46.8	37.6	478.1	597.7	316.2	38.3	1.000107
30000.0	316.2	-39.1	-48.0	35.2**	470.6	596.0	318.2	40.6	1.000105
30500.0	309.2	-40.2	-54.3	20.2**	462.4	594.6	319.8	41.7	1.000103
31000.0	302.4	-41.3	-65.4	5.3**	454.4	593.2	321.3	42.0	1.000101
31500.0	295.6	-42.6			446.7	591.5	322.8	42.4	1.000099
32000.0	288.9	-44.0			439.2	589.7	323.6	41.3	1.000098
32500.0	282.3	-45.4			431.9	587.9	324.3	39.9	1.000096
33000.0	275.9	-46.8			424.7	586.1	325.0	38.5	1.000095
33500.0	269.7	-48.2			417.6	584.3	325.4	37.4	1.000093
34000.0	263.6	-49.6			410.7	582.5	325.9	36.2	1.000091
34500.0	257.6	-51.0			403.9	580.7	326.3	35.0	1.000090
35000.0	251.7	-52.4			397.2	578.8	326.7	33.4	1.000088
35500.0	245.8	-53.7			390.2	577.1	327.1	31.8	1.000087
36000.0	240.0	-55.0			383.2	575.4	328.0	30.3	1.000085
36500.0	234.3	-56.3			376.3	573.7	329.0	28.8	1.000084
37000.0	228.7	-57.6			369.6	572.0	329.1	29.0	1.000082
37500.0	223.3	-58.9			363.0	570.3	328.5	30.2	1.000081
38000.0	218.0	-60.1			356.5	568.6	328.0	32.1	1.000079
38500.0	212.8	-61.4			350.1	566.9	327.7	34.8	1.000078
39000.0	207.7	-62.5			343.6	565.4			1.000077
39500.0	202.7	-62.8			335.6	565.1			1.000075

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

MANDATORY LEVELS

STATION ALTITUDE 4186.74 FEET MSL
9 NOV. 83 0800 HRS MST
ASCENSION NO. 9

313"210009
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	RELHUM PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5126.	5.9	-8.0	36.	.7	16.9
800.0	6745.	2.9	-11.7	33.	352.3	19.6
750.0	8451.	2.0	-12.5	33.	321.3	17.0
700.0	10278.	2.0	-16.4	24.	310.8	12.3
650.0	12241.	2.1	-15.4	26.	331.6	24.6
600.0	14347.	-1.9	-18.3	27.	311.0	30.3
550.0	16597.	-6.7	-22.5	27.	305.9	26.9
500.0	19014.	-11.9	-24.2	35.	315.4	31.3
450.0	21631.	-17.8	-28.0	40.	309.3	32.3
400.0	24483.	-25.1	-35.8	36.	306.4	32.2
350.0	27625.	-32.5	-42.5	36.	309.5	33.8
300.0	31118.	-41.7			321.8	42.1
250.0	35076.	-52.8			326.8	33.0
200.0	39676.	-64.9				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION: ALTITUDE 4186.74 FEET MSL
4 NOV. 83 1100 HRS MST
ASCENSION NO. 19

SIGNIFICANT LEVEL DATA
3130210010
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 10

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
881.2	4186.7	11.7	2.7	54.0
863.7	4765.2	8.3	-11.1	24.0
854.8	5197.6	7.1	-11.1	26.0
803.5	6703.4	2.5	-13.7	29.0
794.3	7009.0	2.3	-15.2	26.0
782.6	7401.6	1.0	-17.8	23.0
761.8	8115.0	1.3	-19.1	20.0
749.9	8530.1	2.6	-17.5	21.0
729.9	9282.3	3.8	-17.7	19.0
715.1	9795.5	3.5	-18.5	18.0
700.0	10364.7	4.1	-18.0	18.0
671.7	11466.8	4.1	-17.4	19.0
621.7	13511.4	-1.6	-21.6	20.0
587.2	14993.0	-4.1	-24.8	18.0
578.4	15389.7	-3.6	-24.4	18.0
565.9	15956.5	-4.2	-19.9	28.0
500.0	19117.1	-12.3	-26.3	30.0
475.1	20394.1	-15.2	-27.2	35.0
449.1	22057.9	-19.5	-25.6	57.0
437.8	22806.5	-20.5	-28.0	51.0
432.9	22680.4	-20.9	-30.4	42.0
400.0	24587.5	-24.8	-35.2	37.0
396.7	24785.6	-25.3	-36.2	35.0
374.9	25875.6	-28.4	-34.0	58.0
353.1	27525.4	-32.6	-41.3	41.0
340.7	28351.7	-34.2	-45.1	32.0
317.3	29975.3	-38.8	-49.2	32.0
300.0	31230.9	-43.0		
250.0	35190.0	-53.0		
234.3	36550.5	-56.5		
224.1	37482.2	-58.7		
200.0	39700.5	-64.2		

STATION ALTITUDE 9186.74 FEET MSL
9 NOV. 83 1100 HRS MST
ASCENSION NO. 10

UPPER AIR DATA
313021001U
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 11

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	RELATIVE HUMIDITY PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
9186.7	882.2	11.7	2.7	54.0	1075.5	658.6	350.0	8.9	1.000274
9500.0	872.1	9.9	-3.9	37.8	1071.4	656.0	350.6	9.5	1.000260
10000.0	856.2	7.6	-11.1	25.1	1061.0	653.2	351.9	10.4	1.000249
10500.0	840.5	6.2	-11.6	26.6	1047.0	651.5	352.9	11.3	1.000245
11000.0	824.4	4.6	-12.4	27.6	1033.3	649.7	353.7	12.2	1.000242
11500.0	809.6	3.1	-13.3	28.6	1019.9	647.9	351.3	12.4	1.000238
12000.0	794.6	2.3	-15.1	26.1	1004.0	646.9	345.8	12.0	1.000233
12500.0	779.7	1.0	-17.9	22.6	989.9	645.3	340.1	11.7	1.000228
13000.0	765.1	1.3	-18.9	20.5	970.6	645.6	334.4	11.3	1.000223
13500.0	750.8	2.5	-17.6	20.9	948.0	647.1	327.9	11.2	1.000219
14000.0	736.8	3.3	-17.6	19.8	927.5	648.1	321.0	11.3	1.000214
14500.0	723.1	3.7	-18.0	18.6	909.2	648.4	313.5	11.7	1.000210
15000.0	709.6	3.7	-18.4	18.0	892.2	648.5	306.3	12.3	1.000206
15500.0	696.5	4.1	-18.0	18.1	874.4	648.9	310.2	13.0	1.000202
16000.0	683.5	4.1	-17.7	18.6	858.2	649.0	315.7	13.8	1.000199
16500.0	670.9	4.0	-17.5	19.0	842.5	648.9	321.7	15.9	1.000195
17000.0	658.5	2.6	-18.5	19.3	830.9	647.2	326.5	18.6	1.000192
17500.0	646.8	1.2	-19.5	19.5	819.5	645.5	327.6	21.0	1.000189
18000.0	635.8	-.2	-20.5	19.7	808.3	643.9	325.7	22.8	1.000186
18500.0	624.8	-1.6	-21.5	20.0	797.3	642.2	324.0	24.7	1.000183
19000.0	614.1	-2.4	-22.6	19.3	784.6	641.2	319.4	26.5	1.000180
19500.0	603.5	-3.3	-23.7	18.7	772.1	640.2	315.4	28.4	1.000177
20000.0	593.2	-4.1	-24.8	18.0	759.8	639.2	310.8	28.7	1.000174
20500.0	583.9	-3.7	-23.4	19.9	744.2	639.7	306.8	29.0	1.000171
21000.0	574.9	-4.3	-24.0	20.0	731.4	639.0	305.2	28.3	1.000169
21500.0	566.0	-5.6	-21.8	28.3	720.7	637.5	304.5	27.6	1.000167
22000.0	557.2	-6.9	-22.0	29.7	710.2	635.9	306.6	27.2	1.000164
22500.0	548.7	-8.2	-23.0	29.0	699.8	634.4	307.6	26.8	1.000161
23000.0	540.4	-9.4	-24.0	29.3	689.6	632.8	306.7	26.2	1.000158
23500.0	532.2	-10.7	-25.0	29.6	679.6	631.3	305.7	26.0	1.000156
24000.0	524.3	-12.0	-26.0	29.9	669.7	629.7	304.8	26.7	1.000153
24500.0	516.4	-13.2	-26.5	31.5	659.4	628.3	304.3	27.6	1.000151
25000.0	508.6	-14.3	-26.8	33.5	649.2	626.9	304.9	28.8	1.000148
25500.0	501.1	-15.5	-27.0	36.4	639.2	625.5	305.3	29.9	1.000146
26000.0	493.6	-16.8	-26.3	43.0	629.5	624.0	305.1	30.0	1.000144
26500.0	486.3	-18.1	-26.0	49.6	620.0	622.4	304.9	30.0	1.000142
27000.0	479.1	-19.4	-25.8	56.2	610.6	620.8	304.9	31.1	1.000140
27500.0	472.1	-20.6	-28.7	47.9	601.4	619.2	305.0	32.5	1.000137
28000.0	465.2	-21.6	-31.2	41.2	592.3	617.1	304.8	33.5	1.000134
28500.0	458.4	-22.6	-32.3	39.9	583.5	615.8	304.3	34.2	1.000132

UPPER AIR DATA

STATION ALTITUDE 4186.74 FEET MSL — 313021001D — GEODETIC COORDINATES

9 NOV. 83 — 1100 HRS MST — RITA — 33.18295 LAT DEG

ASCENSION NO. 10 — TABLE 11 Con't — 106.15114 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	409.9	-23.6	-33.7	38.5	572.0	615.5	303.9	34.8	1.000130
24500.0	401.5	-24.6	-35.0	37.2	562.6	614.3	303.2	33.6	1.000127
25000.0	393.1	-25.9	-35.6	39.5	553.8	612.7	302.3	31.6	1.000125
25500.0	384.9	-27.3	-38.5	50.1	545.4	610.9	301.2	29.7	1.000124
26000.0	376.9	-28.7	-39.6	56.7	537.0	609.2	299.5	28.3	1.000122
26500.0	368.9	-30.0	-36.7	51.6	528.4	607.6	300.2	28.5	1.000119
27000.0	361.1	-31.3	-38.9	46.4	520.0	606.0	303.1	30.4	1.000117
27500.0	353.5	-32.5	-41.2	41.3	511.7	604.4	306.9	30.8	1.000115
28000.0	345.9	-33.5	-43.4	35.8	502.8	603.1	310.8	31.1	1.000113
28500.0	338.5	-34.6	-45.4	32.0	494.3	601.7	312.8	30.0	1.000111
29000.0	331.2	-36.0	-46.7	32.0	486.5	599.9	313.7	27.9	1.000109
29500.0	324.0	-37.5	-48.0	32.0	478.8	598.1	314.2	26.7	1.000107
30000.0	317.0	-38.9	-49.4	31.4**	471.3	596.5	314.0	26.3	1.000105
30500.0	310.0	-40.6	-55.2	18.6**	464.2	594.2	315.0	28.1	1.000104
31000.0	303.1	-42.2	-65.4	5.9**	457.3	592.0	316.5	31.2	1.000102
31500.0	296.3	-43.7			449.8	590.1	317.4	34.0	1.000100
32000.0	289.6	-44.9			442.0	588.5	318.0	36.6	1.000098
32500.0	283.0	-46.2			434.4	586.9	318.7	38.4	1.000097
33000.0	276.5	-47.5			426.9	585.3	319.7	38.6	1.000095
33500.0	270.2	-48.7			419.5	583.6	320.6	38.8	1.000093
34000.0	264.1	-50.0			412.3	582.0	321.5	38.1	1.000092
34500.0	258.1	-51.3			405.2	580.3	322.5	37.2	1.000090
35000.0	252.2	-52.5			398.2	578.7	323.2	36.3	1.000089
35500.0	246.5	-53.8			391.2	577.0	323.4	35.6	1.000087
36000.0	240.6	-55.1			384.3	575.3	323.6	34.9	1.000086
36500.0	234.9	-56.4			377.5	573.6	323.5	33.7	1.000084
37000.0	229.4	-57.6			370.6	572.0	322.9	32.6	1.000083
37500.0	223.9	-58.7			363.8	570.4	323.3	32.1	1.000081
38000.0	218.5	-59.9			357.0	568.9	324.3	32.0	1.000080
38500.0	213.2	-61.1			350.3	567.3			1.000078
39000.0	208.1	-62.3			343.7	565.7			1.000077
39500.0	203.0	-63.5			337.3	564.1			1.000075

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4186.74 FEET MSL
9 NOV. 83 1100 HRS MST
ASCENSION NO. 10

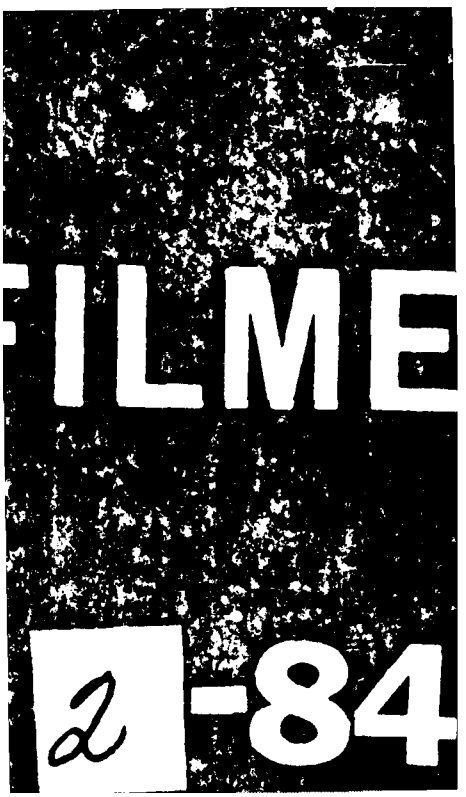
MANDATORY LEVELS
3130210010
RITA

GEODETIC COORDINATES
33.1829S LAT DEG
106.1511W LON DEG

TABLE 12

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HU.	WIND DATA	
		AIR	DEWPOINT		DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE		PERCENT	DEGREES(TN)	KNOTS
850.0	5104.	7.1	-11.1	26.	352.3	10.8
800.0	6814.	2.4	-14.2	28.	347.9	12.2
750.0	8519.	2.6	-17.5	21.	327.6	11.2
700.0	10355.	4.1	-18.0	16.	308.6	12.8
650.0	12327.	1.7	-19.2	19.	328.4	20.4
600.0	14422.	-3.2	-23.6	19.	315.9	28.1
550.0	16672.	-6.1	-21.4	28.	305.3	27.5
500.0	19091.	-12.3	-26.3	30.	304.6	26.9
450.0	21703.	-18.7	-25.9	53.	304.9	30.3
400.0	24548.	-24.8	-35.2	37.	303.1	33.3
350.0	27681.	-33.0	-42.2	39.	308.6	30.9
300.0	31171.	-43.0			316.9	32.5
250.0	35116.	-53.0			323.3	36.1
200.0	39714.	-64.2				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.


FILME
2-84